Low Carbon Building Development in China

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Laws and Regulations

- Law of the People's Republic of China on Conserving Energy
- Law of the People's Republic of China on Renewable Energies
- Regulation on Civil Building Energy Conservation.
- 12th Five Year Plan for the National Economy and Social Development
- Long-term Planning on Renewable Energy Development
- 12th Five Year Energy Saving and Emission Reduction Comprehensive Work Program
Standards and Codes

2009
- [JGJ/T132-2009] Standard for energy efficiency test of residential buildings
- [JGJ176-2009] Technical code for the retrofitting of public building on energy efficiency
- [JGJ/T177-2009] Standard for energy efficiency test of public building
- [GB50366-2009] Technical code for ground source heat pump system

2010
- [JGJ26-2010] Design standard for energy efficiency of residential buildings in severe cold and cold zones
- [JGJ134-2010] Design standard for energy efficiency of residential buildings in hot summer and cold winter zones
- [JGJ203-2010] Technical code for application of solar photovoltaic system of civil buildings
- [GB/T50604-2010] Evaluation Standard for solar heating system in civil building
- [GB50555-2010] Standard for water saving design in civil building

2011
- [GB/T50668-2011] Evaluation Standards for energy saving building
- [GB/T50378-2006] Evaluation standard for green building (in revising)

Note: GB means National; JGJ means Industry
Economic Incentive Policies

- Special funds for building using Renewable 2006

- Award fund for heating measurement and energy conservation transformation of existing buildings with heating systems in northern regions 2007

- Special funds for national office buildings and large commercial buildings 2007

- Financial subsidies to promote efficient lighting products 2007

- Financial subsidy to building using solar PV 2009
Economic Incentive Policies

- Implementing Opinion of accelerate Chinese green building development 2012

  2012 award standard

  - Two star 45¥/m²
  - Eco-Green district in city: 50million¥
  - Three star 80¥/m²
Building energy conservation

- Promote Public building energy conservation strongly 2011
- Guide for energy-saving reconstruction of Existing residential building stock 2012
- Implementing opinion of promote energy-saving reconstruction of Existing residential building stock in hot summer and cold winter zones

City Water using and saving

- The state council about to practice the most strict water resources management system opinion (国发[2012]3号)
- National water-saving city declaration and examination methods
- National water-saving city assessment standards
High strength steel bar applied

- Accelerate high strength steel bar applied in whole country
- The guide opinion on accelerate high strength steel bar using widely
- Target: 65%, 56.5-112Mt (2010-2015)
- Reduce 12%, from 55kg/m2 floor area
Status Quo

**National Wide**
- 23% of the urban existing buildings are energy efficient buildings
- Public buildings' (nonresidential buildings) electricity power consumption intensity is 50-120 kWh/m² each year

**North**
- Thermal comfort level is low in old buildings.
- Winter average indoor temperature is 8-16°C in the rural area
- People in the rural area have less domestic hot water to use

**Central**
- Air conditioning energy efficiency is low
- Passive energy saving measures not in widely use
- Indoor thermal comfort is poor during winter
- Decentralized heating or local heating is widely used

**South**
- Passive energy saving measures are not widely used effectively either.
- It results in the bad indoor thermal comfort in summer and low energy efficiency
Goals

11th Five-Year | 12th Five-Year | 13th Five-Year

2010 | 2015 | 2020

- Urban new buildings energy efficiency will raise more than 30%
- Megacities execute higher level standards, reach or approach the developed countries
- Low energy and extra-low energy demo buildings.

- Green building will account more than 30% of new buildings
- Energy efficiency level of construction and operation process will reach or approach the developed countries current level
By the end of 12th five-year (2015), building energy conservation comes into 116 Mtce energy-saving ability, reduces CO₂ emissions about 300 Mt.

Plans

- Green building & New building: 45 Mtce
- Heating system reform & Energy saving renovation: 27 Mtce
- Public building retrofitting & operation management: 14 Mtce
- Renewable energy building integrated application: 30 Mtce
Thanks for Your Attention!

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